

10/23, 486

BLOCKED POLYISOCYANATE

BACKGROUND OF THE INVENTION

Nonane triisocyanate (NTI or 4-isocyanatomethyl-1,8-octane diisocyanate) is a known material. Various uses for NTI have been suggested. See, e.g., U.S. Patents 4,314,048; 5,714,564; 5,854,301; 6,084,051; 6,090,939; 6,100,326; 6,291,578; 6,399,691; 6,432,485; 5 6,433,072; 6,531,535; 6,566,444; and 6,605,669.

A market need exists for a high functionality, high NCO content, low unblocking temperature polyurethane crosslinker. Pyrazole-blocked isocyanates unblock at relatively low temperatures (see, e.g., U.S. Patents 4,976,837, 5,246,557, 5,521,272 and 5,986,033). The fully blocked

10 reaction product of nonane triisocyanate and a pyrazole meets the market need as far as functionality, NCO content and unblocking temperature but

is not soluble in commercially used coating solvents (see U.S. application 10/1723,646 filed on the same day as the present application (attorney docket number PO-7999)) and as a result has limited usefulness in the coating

15 area.

DESCRIPTION OF THE INVENTION

The present invention is directed to a blocked polyisocyanate based on nonane triisocyanate. More particularly, the invention is directed to a blocked polyisocyanate useful in solvent borne coating compositions and 20 comprising the reaction product of:

- a) nonane triisocyanate;
- b) a pyrazole blocking agent; and
- c) a diol or polyol having a number average molecular weight of from about 62 to about 600 and preferably from about 62 to 25 about 200,

wherein i) the isocyanate to hydroxy equivalent ratio of component a) to component c) is from 1:0.15 to 1:0.6 and ii) the equivalent ratio of

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